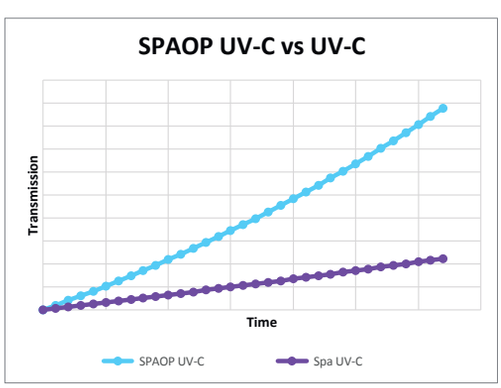
Blue Lagoon SPAOP UV-C

Operation

The SpAOP UV-C uses a special UV lamp that generates radiation of both 254nm and 185nm. UV radiation at the specific wavelength of 185 nanometres is highly energetic and has enough energy to break molecular bonds in water molecules. By doing so free radicals (OH-) will be created in the water through a process known as photodissociation. (H2O). The newly formed free radicals react with dissolved substances and organic pollutants, leading to the degradation of these substances. This improves the transmission rate which in time benefits the regular UV-C disinfection.

Double function, double performance

The Blue Lagoon SpAOP UV-C's efficiency is based on the units special double-function lamp that produces both direct OH-radicals, that have an even stronger oxidizing power than ozone, and UV-C disinfection, ensuring that the water is disinfected and purified at the same time.



Sustainable & Efficient Performance, Easy Maintenance

The double function lamp has an efficient lamplife up to 9.000 hours with an LED lamp replacement indication integrated in the ballast. In addition to the long lamp life, the Blue Lagoon SpAOP UV-C is easy to install and maintain, making it a Sustainable, free of toxic gas, easy to install and maintain, energy efficient ánd cost efficient disinfection for Spa and Hot Tub.

Advantages of the Blue Lagoon SPAOP Compact Ozone & UV-C

- Cost-Efficient Solution; the direct UV-C radical generation technology offers a cost-efficient alternative by eliminating the need for ozone generation.
- Oxidation and disinfection combined by OH-radicals and UV-C
- A stand-alone electronic ballast with LED indicator
- The device will indicate when the lamp needs replacing
- Easy installation and maintenance
- Made in the Netherlands

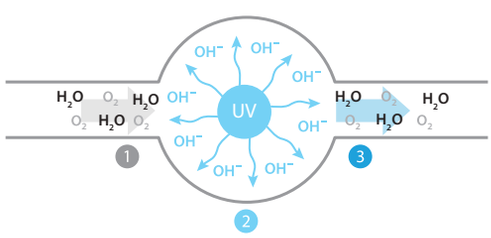
What is AOP by Photodissociation?

The Advanced Oxidation Process (AOP) by direct formation of free radicals combines the benefits of oxidation and UV-C disinfection into one device. By using the Photodissociation technique, Blue lagoon eliminates the need to dissolve ozone by direct formation of the wanted hydroxyl radicals.
The creation of free radicals in water by direct UV radiation at 185 nm can be harnessed for water disinfection, as the reactive hydroxyl radicals can effectively destroy microorganisms, including bacteria, viruses, and protozoa, including Cryptosporidium and Giardia by damaging their DNA or cell membranes. Additionally, the generation of free radicals can also facilitate the breakdown of organic pollutants present in water, making it very useful for Spa treatment processes.

Overall, the direct radiation of water with UV at a wavelength of 185 nm leads to the formation of free radicals, primarily hydroxyl radicals and hydrogen atoms, which are highly reactive and therefore very suitable for water treatment and disinfection.

Complete process AOP by Photodissociation

UV-C Absorption: Water molecules **(1)** absorb the UV radiation at 185 nm. This absorption is facilitated by the oxygen-hydrogen bonds within the water molecule. **Bond Breakage:** The absorbed UV radiation provides enough energy to break the oxygen-hydrogen (O-H) bonds in the water molecule, leading to the formation of hydroxyl radicals **(2). Formation of Free Radicals:** The hydroxyl radical (OH•) is highly reactive. Free radicals are highly reactive and unstable,



seeking to stabilize themselves by either gaining or losing electrons. This gives them a high oxidation potential. **Chemical Reactions:** The newly formed free radicals react with dissolved (organic) substances, leading to the degradation of these substances which also improves the transmission rate. Because of the double function of the lamp (creating free radicals and disinfection by UV-C) the improvement of the transmission rate will also benefit the disinfection rate from the water which is disinfected in the same time. The **lifetime of OH-radicals** is extremely short, because of that the entire treatment process takes place within the UV treatment chamber. Treated water (3) is without •OH-radicals

Benefits AOP by Photodissociation :

- Efficiency: With direct UV radiation at 185 nanometres, we use the power of photon energy to break down water molecules directly, creating hydroxyl radicals (OH-) leaving contaminants no chance.
- Precision Targeting: Our technology precisely targets the oxygen-hydrogen bonds within water molecules, guaranteeing the highest level of contaminant degradation.
- Maximum Reactivity: The ultra-high energy of UV radiation at 185 nanometres initiates immediate reactions, swiftly neutralizing harmful pathogens, organic pollutants, and microorganisms.
- Cost-Efficient Solution: Unlike traditional methods direct UV-C radical generation technology offers a cost-efficient alternative. By eliminating the need for ozone generation.
- Environmental Sustainability: Our innovative approach minimizes the use of chemicals and eliminates harmful by-products,

NEW!

Oxidation and disinfection for healthy water protection

No more odour of toxic Ozone or bound chlorine when getting ready for a Spa session? That is exactly what the Blue lagoon SPAOP UV-C will do for you; Sustainable, free of toxic gas, easy to install and maintain, energy efficient ánd cost efficient disinfection for Spa and Hot Tub! This UV-C AOP system especially designed for use in Spa's will keep your Spa clear and fresh without the downside of Ozone residue. That is what Blue lagoon AOP by direct hydroxyl formation does to your Spa!

Combining OH-radicals, and UV-C to ensure maximum protection against harmful bacteria and viruses without any risk off harmful chemical residue on your skin or in your spa.

Advantages of the Blue Lagoon SpAOP UV-C T5 21 W

- Cost-Efficient Solution; the direct UV-C radical generation technology offers a cost-efficient alternative by eliminating the need for ozone generation.
- Oxidation and disinfection combined by OH radicals and UV-C
- A stand-alone electronic ballast with LED indicator
- The device will indicate when the lamp needs replacing
- Easy installation and maintenance
- Designed and made in the Netherlands

Blue Lagoon **SPAOP T5 21 W Technical**

	21 W	21 W U20	W 21 Z20
Art. number	BE01215	BE01217	BE01216
Type	21 W	21 W	21 W
EAN	8714404042468	8714404042604	8714404042536
Rec. flow for 30 mJ/cm²	3 m³/h	2,5 m³/h	2,5 m³/h
Max. pressure	1 bar	1 bar	1 bar
Max. flow	8 m³/h	6 m³/h	6 m³/h
Diameter unit Ø	58 mm	58 mm	58 mm
Length unit	35 cm	35 cm	35 cm
Diameter in-outlet Ø	50 mm / 1½	20 mm	20 mm
Housing material	PC ASA	PC ASA	PC ASA
Electronic ballast	230 V AC 50 Hz	230 V AC 50 Hz	230 V AC 50 Hz
Lamp power	21 W	21 W	21 W
Lamp	VGE T5 21 W 185nm 4P	VGE T5 21 W 185nm 4P	VGE T5 21 W 185nm 4P
Lifespan lamp	9.000 hours	9.000 hours	9.000 hours
Weight	1,9 Kg	1,9 Kg	1,9 Kg
Quantity full pallet	90 pcs	90 pcs	90 pcs

SALT-WATER

Spare parts

A	F980130AM	Lamp VGE T5 21W 185Nm 4P Base K packed
B	QG089	Quartz Glass VSC 281 x 25 mm 21 W AM
C	E800912	Set (3pcs) O-ring for quartz glass
D	EP021001	Electrics for BL UV-C Spa 21 W LED indicator
E	B212013	Housing Blue Lagoon Spa UV-C / Copper Electrolyzer
	B212500	Housing Blue Lagoon Spa UV-C U20 21W 230V
	B212501	Housing Blue Lagoon Spa UV-C Z20 21W 230V
F	B212014	Set (2pcs) 3-way connection 50 mm
	B212015	Set (2pcs) 3-way connection 48 mm
G	E801509	O-ring 3-way connection NBR 53x4,5
H	3901045	Nut 70 mm x 33,5 mm ABS Black

GFH	SP0096	Blue Lagoon SPA Connection Kit